

PHENIX WEEKLY PLANNING

8/31/06

Don Lynch

PHENIX Shutdown Overview

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| Task_Name | Duration | Start_Date | Finish_Date |
|-----------------------------------|----------------|------------------|-------------------|
| PHENIX Shutdown '06 | 145 days | 5/1/2006 | 12/12/2006 |
| Pre Shutdown Tasks | 60 days | 5/1/2006 | DONE |
| End of Run 6 | 0 days | 6/27/2006 | DONE |
| Shutdown Preparations | 16 days | 6/27/2006 | DONE |
| Detector Upgrades | 47 days | 7/19/2006 | 9/29/2006 |
| Planned electrical power outage | 5 days | 7/24/2006 | DONE |
| Subsystem maint/repair tasks | 47 days | 7/19/2006 | 9/22/2006 |
| Building and infrastructure tasks | 113 days | 5/1/2006 | 10/31/2006 |
| E carriage roll in & setup | 14 days | 10/9/2006 | 10/27/2006 |
| RHIC Cooldown Begins | 0 days | 10/27/2006 | 10/27/2006 |
| Run Prep | 25 days | 12/1/2006 | 12/1/2006 |
| Shutdown Concluded | 0 days | 12/1/2006 | 12/1/2006 |

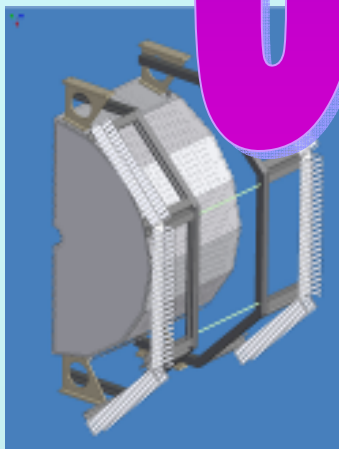
Prior To Shutdown

Technical Support 2006

Pre Shutdown Tasks

| | | |
|--|--------|----------|
| Mechanical design For RXNP | 4 wks | Complete |
| HBD cable mangement | 4 wks | Complete |
| Receive TOF West detectors from VU | 0 days | Complete |
| TOF West pre-installation tests (hi bay) | 4 wks | Complete |
| Design mounting/install'n for MPC N | 6 wks | Complete |
| Order/fabricate RXNP/HBD/MPC | 4 wks | Complete |
| Modify TEC cooling system | 4 wks | Complete |
| Design piping for cooling system | 4 wks | Complete |
| Work Permits | 4 wks | Complete |
| End of Run Cleanup | 4 wks | Complete |

Complete



Shutdown Prep

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Shutdown Preparations

Purge gas from all detectors

End of Run party

DAQ tests (no Flam. Gas)

Open up & prep

Open rolling door

Remove rolling door

Take down EC

Prepare EC

Remove beam

Move MMS

Retract and

Install 12 ton

Move beam

Install decking



16 days

6/26/2006

7/18/2006

2 days

Done

Done

0 days

Done

Done

3 days

Done

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Detector Upgrades

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| TOF West | - | - |
| Design | Done | Done |
| Purchased/procured parts | Done | Done |
| Fabricated parts | Done | Done |
| Assembly at 510 | Done | Done |
| Work permit | Done | Done |
| Mechanical Installation | Done | Done |
| PHENIX mechanical survey offsets (adjustments completed no further adjustment reasonably feasible) | Done | Done |
| Electrical | - | - |
| HV/LV/Signal Cable routing & connecting | Done | Done |
| Modify/upgrade rack | - | - |
| electronics | 18-Jul | 15-Sep |
| cooling water | 18-Jul | 15-Sep |
| Testing | 18-Jul | 15-Sep |



Detector Upgrades

RXNP

Design

Done

Done

Purchased/procured parts

Done

Done

Fabricated parts

-

-

PMT Covers

Done

Done

Fan covers

Done

Done

Assembly: 8 quadrants

-

-

South detector

Done

Done

North detector

Done

Done

Assembly: 8 quadrants

-

-

Assembly: 8 quadrants

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Assembly: 8 quadrants

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Assembly: 8 quadrants

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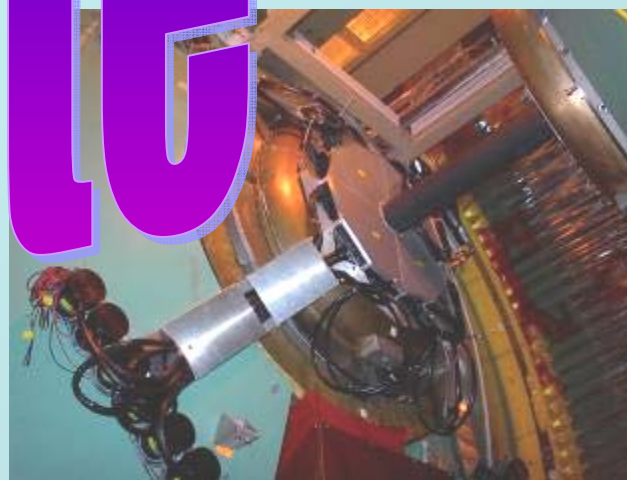
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Assembly: 8 quadrants

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complete



Detector Upgrades

RXNP (Cont'd)

| | | |
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| Electrical Installation | - | - |
| HV/signal/optical routing and connecting | Done | Done |
| Rack installation | - | - |
| Mechanical Installation | 1-Sep | 5-Sep |
| Water hookup | 5-Sep | 8-Sep |
| Power hookup | 5-Sep | 8-Sep |
| Cable connections | 5-Sep | 8-Sep |
| Safety systems | 4-Sep | 8-Sep |
| Grounding | 5-Sep | 8-Sep |
| Testing | 31-Aug | 1-Oct |
| Project Closeout | 27-Oct | 1-Dec |



Detector Upgrades

HBD

| | | |
|--|--------|--------|
| Design | Done | Done |
| Purchased/procured parts | Done | Done |
| Fabricated parts | Done | Done |
| Assembly | - | - |
| West and East detectors at Stony Brook | 18-Jul | 15-Sep |
| electronics racks at PHENIX | 30-Aug | 1-Sep |
| cable trays at PHENIX | Done | Done |
| movable cable trays | Done | Done |
| Fixed cable trays | Done | Done |
| Pre-Survey: West and East detectors at Stony Brook | - | - |
| West detector | Done | Done |
| East detector | 18-Sep | 6-Oct |
| Scribe centerline marks on upper and lower ibeams | Done | Done |
| Mechanical Installation: West and East detectors in IR | - | - |
| West detector | 5-Sep | 6-Sep |
| East detector | 20-Sep | 9-Oct |
| West moveable cable trays | 5-Sep | 6-Sep |
| East moveable cable trays | 25-Sep | 10-Oct |
| Fixed cable trays | Done | Done |



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Detector Upgrades

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|---|--------|--------|
| Installation survey | - | - |
| Set up equipment for West detector | 6-Sep | 6-Sep |
| Adjust location of West detector | 6-Sep | 5-Sep |
| Set up equipment for East detector | 27-Sep | 9-Oct |
| Adjust location of East detector | 28-Sep | 10-Oct |
| Electrical Installation | | |
| HV/signal/LV routing and connecting | 11-Sep | 11-Oct |
| Rack installation and connection | 1 Sep | 8-Sep |
| Mechanical Installation | 1 Sep | 1-Sep |
| Water hookup | 1 Sep | 5-Sep |
| Power hookup (Mike Rau) | 1 Sep | 5-Sep |
| Cable connections | 1 Sep | 8-Sep |
| Safety systems | 1 Sep | 8-Sep |
| Grounding | 1 Sep | 8-Sep |
| Testing | 9-Sep | 13-Oct |
| Gas system | - | - |
| Final piping | 1 Sep | 13-Oct |
| IR distribution panel and monitoring hardware | 1 Sep | 13-Oct |
| Gas house controls and monitoring system | 1 Sep | 31-Oct |
| Monitoring hutch controls, monitoring and piping | 1 Sep | 13-Oct |
| Other: Cooling, Heating, Flash Lamp: design/review/fabrication/installation | 30-Aug | 1/ Oct |

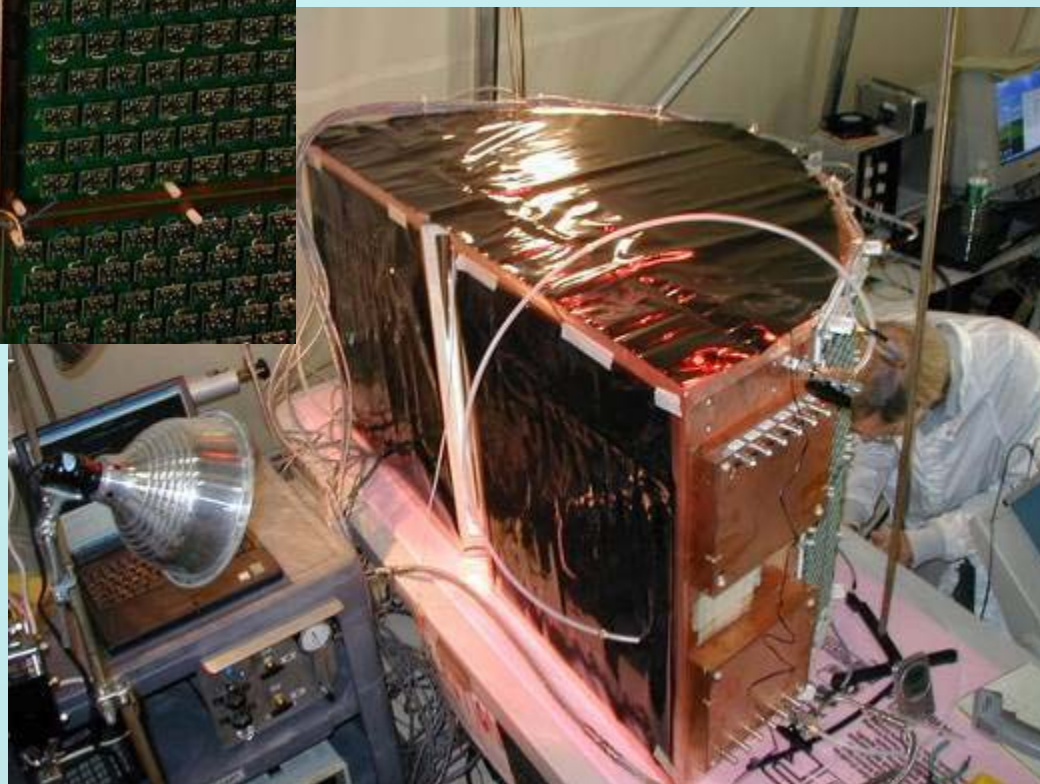


HBD at Stony Brook

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More pictures of the HBD at Stony Brook
can be found at (Note: link has changed) -

<http://picasaweb.google.com/hadronblind>



Pressure & Flow (measurement-1)

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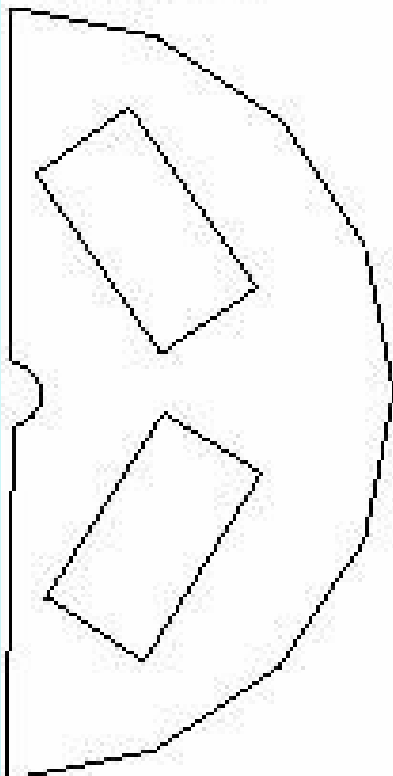


- Assemble prototype manifold.
- All tubing dimensions correct.
- Measure air flow parameters.

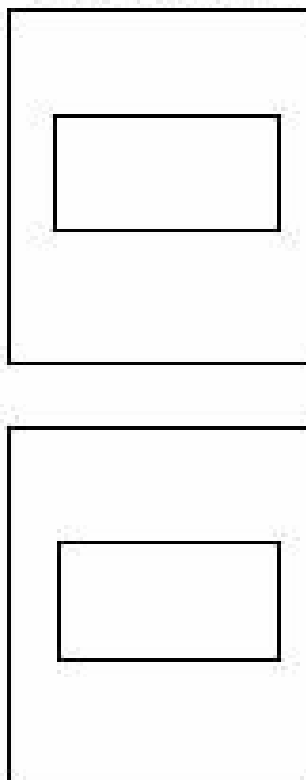


HBD Heaters

Side Heaters



Front Heaters



6 MINCO non-magnetic kapton laminate heaters per detector, 17.6 ohms per heater

70 watt peak power (per heater)

35 Volt/2 amp peak

max temp at continuous peak operation = 60 C

Temperature monitored by RTD's

Interlock needed

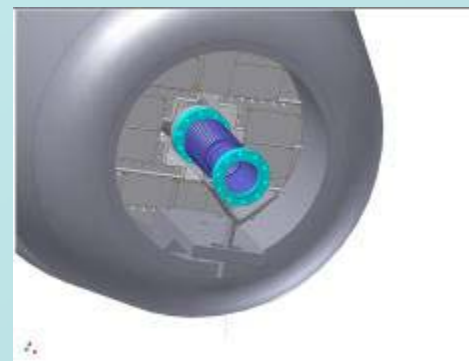
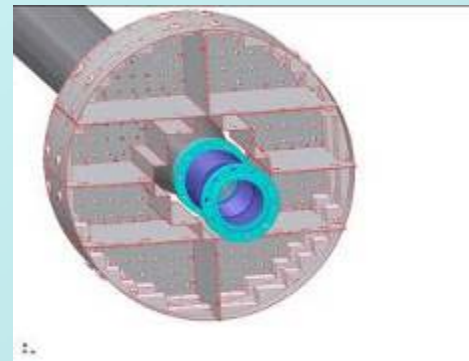
Heaters must be locked out during run

Minimal temperature rise on beampipe and RXNP

Detector Upgrades

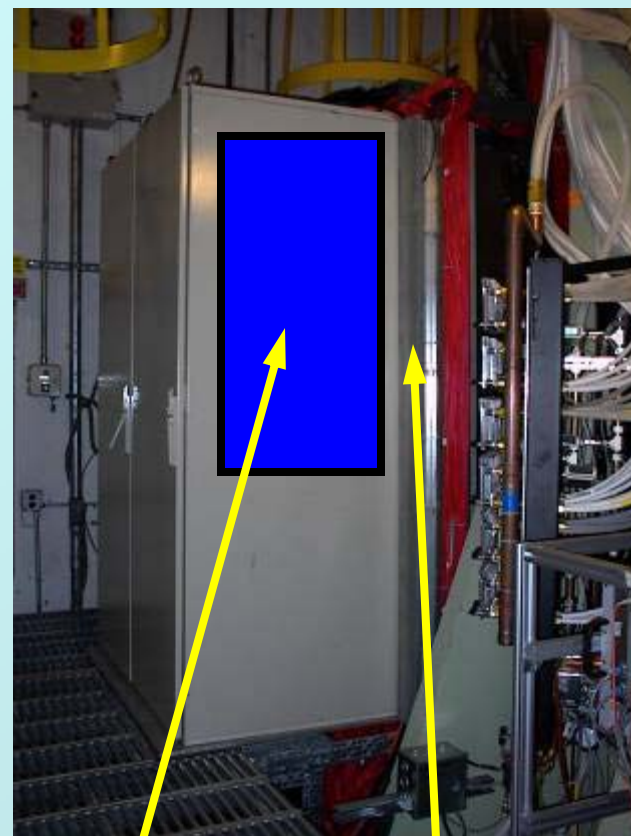
MPC N

| | | |
|-------------------------------------|--------|--------|
| Design | Done | Done |
| Purchased/procured parts | Done | Done |
| Fabricated parts | - | - |
| Detector Parts | Done | Done |
| Go-No Go gauge | Done | Done |
| Assembly | - | - |
| Pre assembly/fit up at UI | Done | Done |
| Pre assembly/fit up at PHENIX | Done | Done |
| electronics racks at PHENIX | 11-Sep | 15-Sep |
| Mechanical Installation: | | |
| Detector sextants | 11-Sep | 12-Sep |
| cable trays | 13-Sep | 14-Sep |
| Installation survey | 15-Sep | 15-Sep |
| Electrical Installation | | |
| HV/signal/LV routing and connecting | 18-Sep | 22-Sep |
| Rack installation and connection | 25-Sep | 29-Sep |
| Mechanical Installation | 25-Sep | 29-Sep |
| Power hookup | 25-Sep | 29-Sep |
| Cable connections | 25-Sep | 29-Sep |
| Safety systems | 25-Sep | 29-Sep |
| Grounding | 25-Sep | 29-Sep |
| Testing | 2-Oct | 13-Oct |
| Project Closeout | 27-Oct | 1-Dec |



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MPC N at BNL



MPC N Rack goes here
oriented with long edge
vertical

18" cable tray has been
replaced with 6" tray shifted
12" to the north on this face
of MUID rack

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Subsystems

Technical Support 2006

IV. Existing Detector Maintenance

EMCal

| | | |
|---------------------------|------|------|
| WC maintenance and repair | Done | Done |
|---------------------------|------|------|

| | | |
|------------------------|------|------|
| EC maintenance& repair | Done | Done |
|------------------------|------|------|

DC

| | | |
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| HV/LV patch panel | Done | Done |
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| West Wire repairs | 18-Sep | 22-Sep |
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MuTr

| | | |
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| Prepare work permits for MMS and MMN | Done | Done |
|--------------------------------------|------|------|

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| Remove SE vertical lampshade | Done | Done |
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| Remove SE bias lampshade | Done | Done |
|--------------------------|------|------|

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| Troubleshoot shorts in MMS | Done | Done |
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| Repair shorts | Done | Done |
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| Troubleshoot and repair Repair MMS and MMN HV/FEE's etc. | Done | Done |
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| Reinstall SE bias lampshade | Done | Done |
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| Reinstall SE vertical lampshade | Done | Done |
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| Closeout workpermit | 9-Oct | 9-Oct |
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Subsystems (continued)

Technical Support 2006

IV. Existing Detector Maintenance

MPC S

| | | |
|-----------------------------------|--------|--------|
| Prepare work permit | Done | Done |
| Remove cables for access | Done | Done |
| Remove top 2 octants for rework | Done | Done |
| Rework/repairs on removed octants | Done | Done |
| Reinstall top octants | 24-Aug | 24-Aug |
| Reinstall wiring | 31-Aug | 1-Sep |
| Closeout work permit | 9-Oct | 9-Oct |

TEC

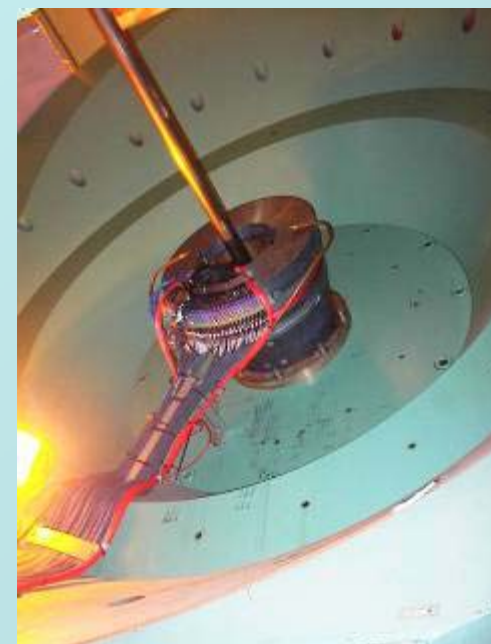
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| Machine slots in fittings | Done | Done |
| Maintenance and repairs on TEC electronics | 31-Jul | 15-Sep |

BBC

| | | |
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| Remove BBC South and | Done | Done |
| Remove BBC North | 7-Sep | 8-Sep |
| Maintenance and repairs | 23-Aug | 22-Sep |
| Reinstall BBC North | 25-Sep | 25-Sep |
| Reinstall BBC South | 26-Sep | 26-Sep |

MuID

| | |
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| 30-Oct | 3-Nov |
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Infrastructure Work

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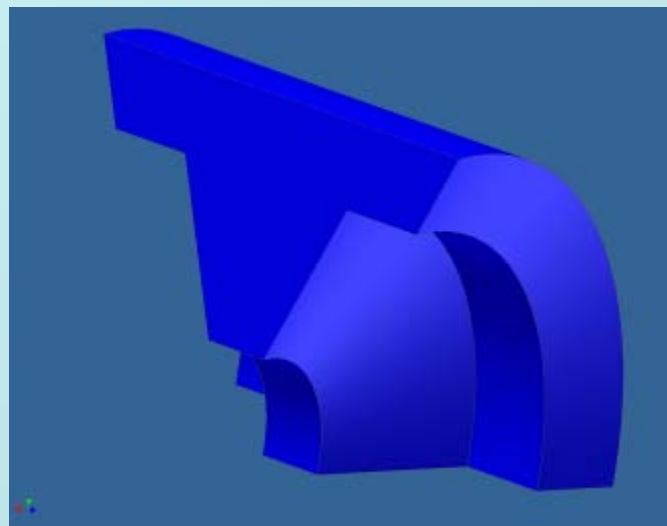
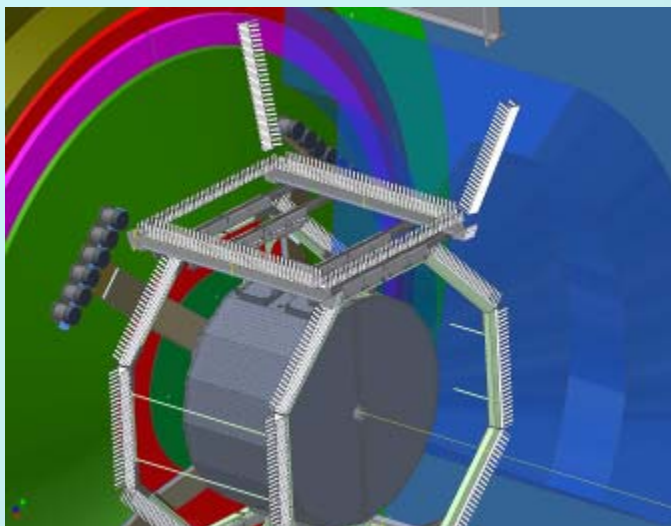
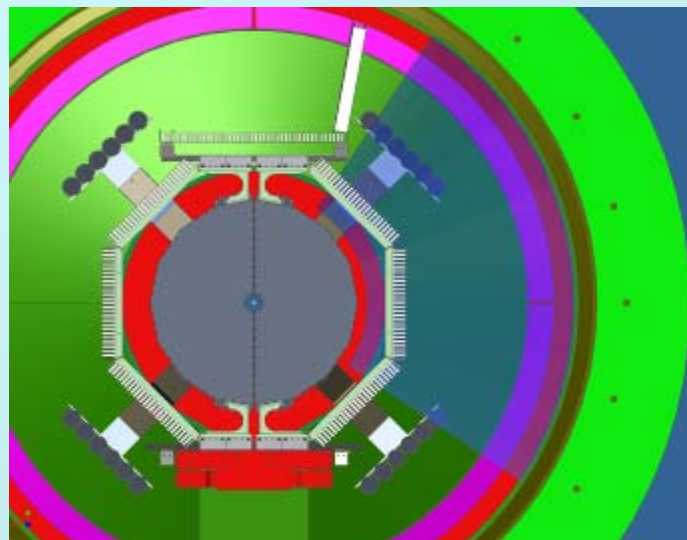
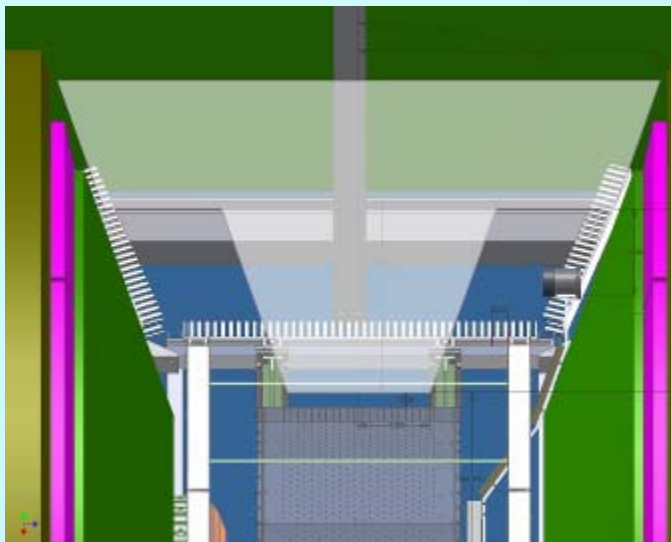
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CAD/RHIC PHENIX infrastucture related mechanical and electrical support

| | | |
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| Emergency remote breaker installation | Done | Done |
| Summer Sunday review platform and safety rails | Done | Done |
| Bridge Water supply vertical piping rework | Done | Done |
| Replace emergency fan louvres | - | - |
| Rewire/Add IR ceiling lights on emergency power | - | - |
| Replace WC sliding platform hoisting cables | - | - |
| Mixing House exhaust fan maintenance | - | - |
| Raw materials storage container painting and doors | Done | Done |
| Roof leak repairs | - | - |
| He Bags | 1-Aug | 31-Oct |
| MulD survey | 2-Oct | 6-Oct |
| Bridge protective runners | Done | Done |



He Bags



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2006 Shutdown Wrapup/Run 7 Prep

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East carriage roll in & setup

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| Prepare EC for move to IR | 9-Oct | 13-Oct |
| EC Roll in | 16-Oct | 17-Oct |
| Connect EC services | 18-Oct | 24-Oct |
| Install EC Ladder | 25-Oct | 26-Oct |
| Install EC rear access & ext. | 26-Oct | 27-Oct |

MuID Commissioning

30-Oct 3-Nov

RHIC Cooldown Begins

27-Oct 27-Oct

Move MMS full North

27-Oct 27-Oct

Install beam pipe collar

30-Oct 30-Oct

Rebuild Rolling door

31-Oct 6-Nov

Install Plug Door & steel platform

6-Nov 6-Nov

Close rolling door

7-Nov 7-Nov

Pink Sheeting & Blue Sheeting

8-Nov 21-Nov

Start Flammable Gas Flow

22-Nov 22-Nov

All Up Commissioning

27-Nov 1-Dec

Beam in yellow ring

22-Nov 29-Nov

Beam in blue ring

29-Nov 5-Dec

RHIC beam conditioning

5-Dec 12-Dec

Shutdown Concluded

12-Dec 12-Dec



Next Week

- Labor Day - Well deserved day of rest for those who actually do work
- RXNP Crate wiring and electrical tests
- HBD west installation
- HBD west final survey
- HBD west cable installation to bridge and to LV/signal rack
- TEC repairs
- BBC N removal for maintenance
- Begin MPC N installation

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Tier I Concerns

1. Flammable material in the tech shop stored in boxes should be placed in the chemical cabinet

We will investigate and address this issue as appropriate.

2. The following housekeeping issues must be corrected:

- a. Boxes stored in the tech shop must be emptied and stored properly.

These are components for new detectors about to be installed. Their current location is proper and appropriate as a temporary location out of the way of current work in the IR until they are needed. No action required. Boxes will be discarded properly after contents are installed.

- b. Storing material between the building and shielding (Electronics Area) is not considered a storage area and should be removed.

- c. Storing gas tanks and holders under the wood steps outside is not allowed and should be removed.

We will investigate and address this issue as appropriate.

- d. Cardboard on floor behind PHENIX experiment should be removed.

We will investigate and address this issue as appropriate.

- e. 1008F wiring found outside and should be relocated.

We will investigate and address this issue as appropriate.

3. The PHENIX facility has numerous 4" openings that are not in compliance with OSHA standard. The standard allows 4" holes but not openings that are 4" wide by 8 - 10 feet long. All of the grating system needs to have fillers placed in these large openings

These openings are necessary for maneuvering the large detectors and our 12 ton cart. All unnecessary openings have already been addressed by the upgraded grating system installed by C-A during the 2005 shutdown. Bridging the gaps with fillers places an unnecessary burden on the PHENIX technical staff to continuously fill and unfill these gaps as equipment needs to move along the rails. PHENIX does not agree with the tier I findings on this issue and will not take any further action to address the findings.

Tier I Concerns

4. In the PHENIX highbay area there is a sink and water pump in front of a disconnect that needs to be relocated per OSHA

Movement of the sink and water pump is a facilities issue that has previously been brought to the attention of the (C-A) facility manager. It will be addressed on a priority basis by C-A.

5. The PHENIX laser is not secured. A key was left in the power supply and the door is open. Remove the laser key and secure the area as required.

The tier 1 finding is incorrect. This has previously been addressed by PHENIX and C-A safety wherein it has been agreed that the laser is secured by lock within the laser enclosure and not by locking the room. The required safety/security procedure is and has been followed.

6. The PHENIX gas storage facility has three (3) small isobutene cylinders not secured. A gas storage sign is on the ground. Also a gas cylinder rack is all rusted (behind the carbon dioxide dewar) that needs to be replaced. In addition, the 5,200 gallon dewar does not have a "label" on it identifying its contents



These issues are acknowledged and will be addressed promptly (by Oct. 18).

7. In the PHENIX gas storage facility there is a 5,200 gallon dewar that has a manufacturer plate on it stating that this dewar is rated and designed to hold hydrogen. However, it is believed that the content of this large dewar is nitrogen, which is 14 times the density of hydrogen. This dewar requires the manufacturer to supply legal documentation stating that it is capable of holding 5,200 gallons of nitrogen. This document must be provided to the C-AD ESH Coordinator.



This issue has been addressed by the C-A safety committee and demonstrated to the committee by test documentation and calculations that the dewar is adequately designed for liquid nitrogen. PHENIX will obtain appropriate documentation indicating the suitability of the subject dewar for its current service and make sure that the tank is appropriately labeled promptly (by Oct. 18).

Where To Find PHENIX Technical Info

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Links for the shutdown schedule as well as weekly planning meeting slides, long term planning, pictures, videos and other technical info can be found from the web site:

http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL_SSint-page.htm